

THE FLORA OF ISLE AU HAUT, MAINE¹

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Isle au Haut, in the outermost part of Penobscot Bay, Maine, covers an area of over seven square miles, or 4700 acres, 2800 of which are in Acadia National Park. Though first discovered by Champlain in 1604, who originally named it "Isle Haute", the island was not permanently settled until 1792. By 1864 the population had risen to around 300 settlers, most of whom engaged in fishing and small scale farming. Today the island's population is seasonal, rising to a few hundred during the summer months, with only twenty or thirty permanent residents remaining through the winter.

The general topographic aspect of the island is dominated by a central north-south ridge of hills. Of these the most prominent is Champlain Mountain (543 feet). Bogs are frequent in lowland areas with none of any consequence occurring above 200 feet. The interior of the island is drained by a number of small seasonal streams, and one relatively large body of freshwater, Long Pond, is located at the southeastern end of the island.

The Isle au Haut shoreline is typical of much of the "drowned coast" of the Penobscot Bay region. For the most part it is highly irregular, rocky, and steep with pronounced headlands present on Eastern Head, Western Head, and around Duck Harbor. The beaches which do occur are

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usually boulder-strewn and gravelly. Salt marshes occupy the shores of some of the coves.

Isle au Haut lies within the central and eastern sector of the coastal climatic section of Maine as described by Fobes (1946). In many ways this area is typical of any moist, north temperate region and is characterized by warm days and cool nights during the summer months. As usual in coastal areas, the sea exerts an important moderating influence on the island's climate, making it generally more equable than that of inland areas. This has the effect of reducing the summer and winter extremes of temperature. Consequently the growing season is prolonged. This prolongation of the growing season on the one hand creates a climate suitable for certain plants of southern affinities. On the other hand, the frequency of fogs together with the effects of cold sea water buffeting exposed shores and headlands create conditions similar to those in more northern regions. These exposed shores provide habitats for plants of more boreal and arctic areas.

In the early decades of this century a number of well known botanists visited Isle au Haut. Mr. Nathaniel T. Kidder of Milton, Massachusetts, collected widely on the island roughly from 1900 to 1933. His notes and specimens are deposited in the library and herbarium of the New England Botanical Club. The New England Botanical Club Herbarium also contains specimens collected by Dr. Albert F. Hill who made an extensive botanical survey of Isle au Haut from 1913 to 1919 in connection with the preparation of his *Vascular Flora of the Penobscot Bay Region* (Hill, 1919). In addition, Miss Kate Furbish of Brunswick, Maine, has left us a smaller, though valuable, collection of Isle au Haut plants dating from 1909.

No comprehensive investigation of the flora of Isle au Haut was made until the writer's *The Vascular Flora of Isle au Haut, Knox County, Maine* (University of New Hampshire M. S. Thesis, unpubl.). This flora contained an annotated list of 724 taxa of vascular plants known to have occurred on Isle au Haut. It was based on collections made

by the writer in 1968 and 1969 all of which are deposited in the herbarium of the University of New Hampshire, and on previous collections if corroborated by herbarium specimens. The following list includes thirty-one additional taxa. These records are based on specimens recently found in a collection of Isle au Haut plants made by Nathaniel T. Kidder. This Kidder collection is a small portion of the Herbarium of the Portland Society of Natural History recently acquired on an extended loan basis by the University of New Hampshire Herbarium (NHA).

With a few exceptions, the nomenclature of the Spermatophytes employed in the following list essentially is that of *Gray's Manual of Botany* (8th ed., 1950). Pteridophyte nomenclature, however, follows Seymour (1969).

LIST OF PLANTS OF ISLE AU HAUT¹

- **Equisetum arvense* L., var. *arvense*
- E. sylvaticum* L., var. *pauciramosum* Milde
- E. sylvaticum* L., var. *pauciramosum* Milde, forma *multiramosum* Fern.
- Lycopodium Selago* L., var. *appressum* Desv.
- L. lucidulum* Michx., var. *lucidulum*
- L. lucidulum* Michx., var. *occidentale* (Clute) L. R. Wilson
- L. inundatum* L.
- **L. annotinum* L., var. *annotinum*
- L. annotinum* L., var. *acrifolium* Fern.
- **L. clavatum* L., var. *clavatum*
- L. clavatum* L., var. *megastachyon* Fern. & Bissell
- **L. obscurum* L., forma *obscurum*
- **L. obscurum* L., forma *dendroideum* (Michx.) Blomq. & Corr.

¹Those taxa preceded by an asterisk (*) are known to have occurred on Isle au Haut in 1968-69. Those marked by two asterisks (**) were not included in Wise, 1970 (unpubl.) and represent the thirty-one additional Kidder specimens recently discovered in the Portland Society of Natural History collection. Taxa preceded by a plus sign (+) were collected on Isle au Haut in 1968-69, and are not known to have been collected there previously.

- L. complanatum* L., var. *flabelliforme* Fern.
L. tristachyum Pursh
Selaginella rupestris (L.) Spring
Isoetes muricata Dur.
Botrychium multifidum (Gmel.) Rupr., var. *intermedium* (D. C. Eat.) Farw.
B. dissectum Spreng., forma *dissectum*
B. dissectum Spreng., forma *obliquum* (Muhl.) Fern.
+ *B. matricariaefolium* A. Br.
**Osmunda regalis* L., var. *spectabilis* (Willd.) Gray
**O. Claytoniana* L.
**O. cinnamomea* L.
Cystopteris fragilis (L.) Bernh., var. *Mackayii* Lawson
**Onoclea sensibilis* L.
+ *Thelypteris palustris* (Salisb.) Schott, var. *pubescens* (Lawson) Fern.
+ *T. simulata* (Davenp.) Nieuwl.
**T. noveboracensis* (L.) Nieuwl.
**T. Phegopteris* (L.) Slosson
**Gymnocarpium Dryopteris* (L.) Newm.
**Dryopteris spinulosa* (O. F. Muell.) Watt, var. *intermedia* (Muhl.) Underw.
**D. spinulosa* (O. F. Muell.) Watt, var. *americana* (Fisch.) Fern.
**D. cristata* (L.) Gray
**D. marginalis* (L.) Gray
Polystichum acrostichoides (Michx.) Schott
**Dennstaedtia punctilobula* (Michx.) Moore
Athyrium Filix-femina (L.) Roth, var. *Michauxii* (Spreng.) Farw.
A. Filix-femina (L.) Roth, var. *Michauxii* (Spreng.) Farw., forma *elatus* (Link) Clute
+ *A. Filix-femina* (L.) Roth, var. *Michauxii* (Spreng.) Farw., forma *rubellum* (Gilbert) Farw.
**Pteridium aquilinum* (L.) Kuhn, var. *latiusculum* (Desv.) Underw.
**Polypodium virginianum* L.
Taxus canadensis Marsh.

- **Abies balsamea* (L.) Mill.
- ***Abies balsamea* (L.) Mill., var. *phanerolepis* Fern.
- **Tsuga canadensis* (L.) Carr.
- **Picea glauca* (Moench) Voss
- **P. rubens* Sarg.
- **P. mariana* (Mill.) BSP
- **Larix laricina* (DuRoi) K. Koch
- **Pinus Strobus* L.
- **P. resinosa* Ait.
- **P. rigida* Mill.
- **Thuja occidentalis* L.
- **Juniperus communis* L., var. *depressa* Pursh
- **J. horizontalis* Moench
- **Typha latifolia* L.
- **Sparganium americanum* Nutt.
- S. chlorocarpum* Rydb., var. *chlorocarpum*
- **S. chlorocarpum* Rydb., var. *acaule* (Beeby) Fern.
- S. angustifolium* Michx.
- S. minimum* (Hartm.) Fries
- Zostera marina* L., var. *stenophylla* Aschers. & Graebn.
- **Potamogeton epihydrus* Raf., var. *Nuttallii* (C. & S.)
 Fern.
- P. Oakesianus* Robbins.
- **Triglochin maritima* L.
- T. palustris* L.
- Alisma triviale* Pursh
- Sagittaria graminea* Michx.
- **Festuca rubra* L., var. *rubra*
- F. rubra* L., var. *rubra*, forma *megastachys* (Gaudin)
 Holmb.
- F. elatior* L.
- +*F. elatior* L., forma *aristata* Holmb.
- Puccinellia maritima* (Huds.) Parl.
- **P. paupercula* (Holm.) Fern. & Weath., var. *alaskana*
 (Scribn. & Merr.) Fern. & Wieg.
- **Glyceria canadensis* (Michx.) Trin.
- **G. laxa* Scribn.
- **G. striata* (Lam.) Hitchc., var. *striata*

- G. striata* (Lam.) Hitchc., var. *stricta* (Scribn.) Fern.
 **Poa annua* L.
 **P. compressa* L.
 **P. pratensis* L.
P. nemoralis L.
 **Dactylis glomerata* L., var. *glomerata*
D. glomerata L., var. *ciliata* Peterm.
 **Molinia caerulea* (L.) Moench
Cynosurus cristatus L.
 +*Agropyron trachycaulum* (Link) Malte, var. *majus*
 (Vasey) Fern.
A. trachycaulum (Link) Malte, var. *novae-angliae*
 (Scribn.) Fern.
 **A. repens* (L.) Beauv., var. *repens*
A. repens (L.) Beauv., var. *repens*, forma *aristatum*
 (Schum.) Holmb.
A. repens (L.) Beauv., var. *repens*, forma *trichorrhachis*
 Rohlena
A. repens (L.) Beauv., var. *repens*, forma *pilosum*
 (Scribn.) Fern.
 +*Lolium multiflorum* Lam.
Hordeum jubatum L.
H. vulgare L.
 ***Triticum aestivum* L.
Secale cereale L.
 **Elymus arenarius* L., var. *villosus* Mey.
 **E. virginicus* L., var. *virginicus*
E. virginicus L., var. *virginicus*, forma *hirsutiglumis*
 (Scribn.) Fern.
Avena sativa L.
 **Deschampsia flexuosa* (L.) Trin., var. *flexuosa*
 +*D. flexuosa* (L.) Trin., var. *flexuosa*, forma *flavescens*
 Sylven
 +*D. caespitosa* (L.) Beauv., var. *parviflora* (Thuill.)
 Richter
 **Danthonia spicata* (L.) Beauv., var. *spicata*
D. compressa Aust.

- **Calamagrostis canadensis* (Michx.) Nutt., var. *canadensis*
Agrostis alba L., var. *alba*
A. alba L., var. *palustris* (Huds.) Pers.
**A. tenuis* Sibth.
**A. scabra* Willd.
A. perennans (Walt.) Tuckerm.
Cinna latifolia (Trev.) Griseb.
**Phleum pratense* L.
**Alopecurus pratensis* L.
**Muhlenbergia uniflora* (Muhl.) Fern.
+*Brachyelytrum erectum* (Schreb.) Beauv., var. *erectum*
B. erectum (Schreb.) Beauv., var. *septentrionale* Babel
Oryzopsis asperifolia Michx.
**O. canadensis* (Poir.) Torr.
**Spartina pectinata* Link
**S. alterniflora* Loisel.
**S. patens* (Ait.) Muhl.
**S. × caespitosa* A. A. Eat.
**Anthoxanthum odoratum* L.
**Leersia oryzoides* (L.) Sw.
Panicum capillare L., var. *occidentale* Rydb.
**P. boreale* Nash
P. lanuginosum Ell., var. *implicatum* (Scribn.) Fern.
+*P. lanuginosum* Ell., var. *septentrionale* Fern.
+*P. subvillosum* Ashe
Echinochloa crusgalli (L.) Beauv.
**Setaria glauca* (L.) Beauv.
S. viridis (L.) Beauv.
**Dulichium arundinaceum* (L.) Britt.
Eleocharis parvula (R. & S.) Link
E. obtusa (Willd.) Schultes
**E. halophila* Fern. & Brack.
**E. tenuis* (Willd.) Schultes
*? *E. elliptica* Kunth.
+*Scirpus cespitosus* L., var. *callosus* Bigel.
S. americanus Pers.
S. acutus Muhl.

- **S. paludosus* Nels., var. *atlanticus* Fern.
- **S. rubrotinctus* Fern.
- **S. atrovirens* Willd., var. *georgianus* (Harper) Fern.
- S. cyperinus* (L.) Kunth, var. *cyperinus*
- **S. cyperinus* (L.) Kunth, var. *pelius* Fern.
- S. cyperinus* (L.) Kunth, var. *pelius* Fern., forma *condensatus* (Fern.) S. F. Blake
- S. pedicellatus* Fern.
- S. atrocinctus* Fern.
- Eriophorum spissum* Fern.
- **E. tenellum* Nutt.
- **E. angustifolium* Honckeny
- **E. virginicum* L.
- **Rhynchospora alba* (L.) Vahl
- **Carex stipata* Muhl.
- **C. trisperma* Dew., var. *trisperma*
- C. trisperma* Dew., var. *Billingsii* Knight
- C. Mackenziei* Krecz.
- C. canescens* L., var. *disjuncta* Fern.
- C. canescens* L., var. *subloliacea* Laestad.
- **C. brunnescens* (Pers.) Poir., var. *sphaerostachya* (Tuckerm.) Kukenth.
- C. Deweyana* Schwein.
- C. exilis* Dew.
- **C. atlantica* Bailey
- **C. cephalantha* (Bailey) Bickn.
- ***C. angustior* Mackenz.
- **C. scoparia* Schkuhr, var. *scoparia*
- **C. Crawfordii* Fern.
- C. tenera* Dew.
- ***C. cumulata* (Bailey) Mackenz.
- ***C. hormathodes* Fern.
- C. hormathodes* Fern., forma *invisa* (W. Boott) Fern.
- C. adusta* Boott
- +*C. argyrantha* Tuckerm.
- ***C. aenea* Fern.
- C. leptalea* Wahlenb.
- C. communis* Bailey

- **C. Emmonsii* Dew.
- ***C. artitecta* Mackenz.
- C. novae-angliae* Schwein.
- C. deflexa* Hornem.
- + *C. umbellata* Schkuhr.
- C. paleacea* Wahlenb.
- C. paleacea* Wahlenb., forma *erectiuscula* Fern.
- **C. nigra* (L.) Reichard, var. *nigra*
- C. nigra* (L.) Reichard, var. *strictiformis* (Bailey) Fern.
- **C. stricta* Lam., var. *stricta*
- **C. paupercula* Michx., var. *irrigua* (Wahlenb.) Fern.
- C. Houghtonii* Torr.
- **C. pallescens* L., var. *neogaea* Fern.
- **C. arctata* Boott
- **C. debilis* Michx., var. *Rudgei* Bailey
- C. conoidea* Schkuhr
- **C. panicea* L.
- + *C. laxiflora* Lam.
- **C. ormostachya* Wieg.
- C. leptonervia* Fern.
- C. flava* L.
- **C. viridula* Michx.
- C. pauciflora* Lightf.
- **C. lurida* Wahlenb.
- **C. folliculata* L.
- C. intumescens* Rudge, var. *Fernaldii* Bailey
- **C. rostrata* Stokes
- Arisaema Stewardsonii* Britt.
- ***Calla palustris* L.
- **Symplocarpus foetidus* (L.) Nutt.
- Lemna trisulca* L.
- **Eriocaulon septangulare* With.
- **Juncus bufonius* L., var. *bufonius*
- **J. Gerardi* Loisel., var. *Gerardi*
- **J. tenuis* Willd., var. *tenuis*
- **J. Greenei* Oakes & Tuckerm.
- **J. effusus* L., var. *compactus* Lej. & Court.

- J. effusus* L., var. *decipiens* Buchenau
 **J. effusus* L., var. *Pylaei*
 **J. balticus* Willd., var. *littoralis* Engelm.
 **J. canadensis* J. Gay, var. *canadensis*
 **J. brevicaudatus* (Engelm.) Fern.
J. militaris Bigel.
 **J. articulatus* L., var. *articulatus*
J. pelocarpus Mey.
 **Luzula acuminata* Raf.
 **L. multiflora* (Retz.) Lejeune, var. *multiflora*
 **L. multiflora* (Retz.) Lejeune, var. *fusconigra* Celak.
 ***L. multiflora* (Retz.) Lejeune, var. *acadiensis* Fern.
 **Allium Schoenoprasum* L., var. *sibiricum* (L.) Hartm.
Hemerocallis fulva L.
 **Clintonia borealis* (Ait.) Raf.
Smilacina racemosa (L.) Desf.
S. trifolia (L.) Desf.
 **Maianthemum canadense* Desf.
 **Streptopus roseus* Michx., var. *perspectus* Fassett
 **Polygonatum pubescens* (Willd.) Pursh
Medeola virginiana L.
Trillium undulatum Willd.
 **Sisyrinchium montanum* Greene, var. *crebrum* Fern.
Iris Hookeri Penny
 **I. versicolor* L.
 **Cypripedium acaule* Ait.
 **Habenaria clavellata* (Michx.) Spreng., var. *ophioglossoides* Fern.
H. orbiculata (Pursh) Torr.
H. macrophylla Goldie
H. obtusata (Pursh) Richards
 **H. lacera* (Michx.) R. Br.
H. psycodes (L.) Sw.
 **H. fimbriata* (Ait.) R. Br.
 **Pogonia ophioglossoides* (L.) Ker
 **Calopogon pulchellus* (Salisb.) R. Br.
Arethusa bulbosa L.
 ***Spiranthes gracilis* (Bigel.) Beck

- **S. cernua* (L.) Richard, var. *cernua*
- **S. cernua* (L.) Richard, var. *ochroleuca* (Rydb.) Ames
S. Romanzoffiana Cham.
- **Goodyera repens* (L.) R. Br., var. *ophioides* Fern.
Corallorhiza trifida Chatelain, var. *verna* (Nutt.) Fern.
- **C. maculata* Raf.
- **Malaxis unifolia* Michx.
Liparis Loeseli (L.) Richard
Salix lucida Muhl., var. *lucida*
S. alba L., var. *vitellina* (L.) Stokes
S. rigida Muhl.
- **S. Bebbiana* Sarg.
- **S. discolor* Muhl.
- ***S. humilis* Marsh.
S. gracilis Anderss., var. *textoris* Fern.
S. coactilis Fern.
- **Populus tremuloides* Michx., var. *tremuloides*
- **P. tremuloides* Michx., var. *magnifica* Vict.
- **P. grandidentata* Michx.
P. balsamifera L.
- **P. × gileadensis* Rouleau
- **Myrica Gale* L., var. *subglabra* (Chev.) Fern.
- **M. pensylvanica* Loisel.
- **Comptonia peregrina* (L.) Coult.
- **Ostrya virginiana* (Mill.) K. Koch
- **Betula alleghaniensis* Britt. (= *B. lutea* Michx. f. of
Gray's Manual)
- **B. populifolia* Marsh.
B. caerulea-grandis Blanch.
- **B. populifolia* Marsh. × *B. papyrifera* Marsh., var.
papyrifera
- **B. papyrifera* Marsh., var. *papyrifera*
- **B. papyrifera* Marsh., var. *cordifolia* (Regel) Fern.
- **Alnus crispa* (Ait.) Pursh, var. *mollis* Fern.
A. rugosa (DuRoi) Spreng., var. *rugosa*
- **A. rugosa* (DuRoi) Spreng., var. *americana* (Regel)
Fern.
- **Fagus grandifolia* Ehrh.

- **Quercus rubra* L.
- Humulus Lupulus* L.
- ***Urtica viridis* Rydb.
- **U. dioica* L.
- U. urens* L.
- **Arceuthobium pusillum* Peck
- Rumex altissimus* Wood.
- R. pallidus* Bigel.
- R. domesticus* Hartm.
- R. orbiculatus* Gray
- **R. crispus* L.
- **R. Acetosella* L., var. *Acetosella*
- **Polygonum aviculare* L., var. *vegetum* Ledeb.
- **P. aviculare* L., var. *littorale* (Link) W. D. J. Koch
- P. lapathifolium* L.
- P. scabrum* Moench
- P. Careyi* Olney
- **P. Hydropiper* L.
- **P. Persicaria* L.
- P. punctatum* Ell.
- **P. sagittatum* L.
- **P. cilinode* Michx.
- P. cilinode* Michx., forma *erectum* (Peck) Fern.
- ***P. Convolvulus* L., var. *Convolvulus*
- P. Convolvulus* L., var. *subalatum* Lej. & Court.
- Fagopyrum sagittatum* Gilib.
- **Chenopodium album* L.
- **Atriplex patula* L., var. *patula*
- **A. patula* L., var. *hastata* (L.) Gray
- **A. patula* L., var. *littoralis* (L.) Gray
- + *A. glabriuscula* Edmondston
- **Salicornia europaea* L., var. *europaea*
- S. europaea* L., var. *prostrata* (Pall.) Fern.
- **Suaeda maritima* (L.) Dumort.
- + *S. linearis* (Ell.) Moq.
- **Salsola Kali* L., var. *Kali*
- Amaranthus retroflexus* L.
- A. albus* L.

- Portulaca oleracea* L.
Montia lamprosperma Cham.
 **Spergularia rubra* (L.) J. & C. Presl.
S. marina (L.) Griseb., var. *leiosperma* (Kindb.) Gurke
 **S. canadensis* (Pers.) Don
 **Spergula arvensis* L.
 **Sagina procumbens* L.
S. nodosa (L.) Fenzl., var. *pubescens* Mert. & Koch
 **Arenaria lateriflora* L.
A. peploides L., var. *robusta* Fern.
 **A. groenlandica* (Retz.) Spreng.
Stellaria media (L.) Cyrillo
S. graminea L.
S. calycantha (Ledeb.) Bong., var. *isophylla* Fern.
 **S. calycantha* (Ledeb.) Bong., var. *floribunda* Fern.
 **Cerastium vulgatum* L.
C. arvense L.
 + *C. tomentosum* L.
 ***Lychnis alba* Mill.
 ***Silene Armeria* L.
S. noctiflora L.
Saponaria officinalis L.
 **Dianthus deltoides* L.
D. plumarius L.
 **Nuphar variegatum* Engelm.
 **Nymphaea odorata* Ait.
 **Ranunculus Cymbalaria* Pursh
R. repens L.
 **R. acris* L., var. *acris*
 **R. bulbosus* L.
Thalictrum polygamum Muhl.
Clematis virginiana L.
 **Coptis groenlandica* (Oeder) Fern.
Aquilegia vulgaris L.
Actaea rubra (Ait.) Willd.
 **A. pachypoda* Ell.
 **Berberis Thunbergii* DC
 **Corydalis sempervirens* (L.) Pers.

- **Thlaspi arvense* L.
- **Iberis umbellata* L.
- Lepidium campestre* (L.) R. Br.
- L. densiflorum* Schrad.
- **Capsella Bursa-pastoris* (L.) Medic.
- **Cakile edentula* (Bigel.) Hook.
- Raphanus Raphanistrum* L.
- ***R. sativus* L.
- Brassica Kaber* (DC.) L. C. Wheeler, var. *pinnatifida*
 (Stokes) L. C. Wheeler
- B. juncea* (L.) Coss.
- **B. nigra* (L.) Koch
- B. Rapa* L.
- **Sisymbrium officinale* (L.) Scop., var. *leiocarpum* DC.
- S. altissimum* L.
- Hesperis matronalis* L.
- Erysimum cheiranthoides* L.
- Rorippa sylvestris* (L.) Bess.
- R. islandica* (Oeder) Borbas, var. *Fernaldiana* Butt. &
 Abbe
- Armoracia lapathifolia* Gilib.
- **Barbarea vulgaris* R. Br., var. *arcuata* (Opiz) Fries
- B. vulgaris* R. Br., var. *brachycarpa* Rouy & Foucaud
- Cardamine pensylvanica* Muhl.
- ***C. parviflora* L., var. *arenicola* (Britt.) O. E. Schulz
- **Sarracenia purpurea* L.
- **Drosera intermedia* Hayne
- **D. rotundifolia* L., var. *rotundifolia*
- ***Sedum purpureum* (L.) Link
- S. Rosea* (L.) Scop.
- ***Sempervivum tectorum* L.
- **Ribes hirtellum* Michx., var. *hirtellum*
- **R. hirtellum* Michx., var. *calcicola* Fern.
- R. lacustre* (Pers.) Poir.
- **R. glandulosum* Grauer
- R. triste* Pall.
- R. sativum* Syme
- **Hamamelis virginiana* L., var. *virginiana*

- **Spiraea latifolia* (Ait.) Borkh.
- **S. tomentosa* L.
- +*S. japonica* L.f., cv. *Anthony Waterer*
- **Pyrus Malus* L.
- **P. floribunda* Lindl.
- **P. melanocarpa* (Michx.) Willd.
- **P. americana* (Marsh.) DC.
- **P. decora* (Sarg.) Hyland
- **P. Aucuparia* (L.) Gaertn.
- Amelanchier stolonifera* Wieg.
- ***A. canadensis* (L.) Medic.
- A. arborea* (Michx. f.) Fern.
- **A. laevis* Wieg.
- ***A. laevis* Wieg. × *A. canadensis* (L.) Medic.
- A. Bartramiana* (Tausch) Roemer × *A. laevis* Wieg.
- +*Crataegus chrysocarpa* Ashe
- **C. Jonesae* Sarg.
- **C. macrosperma* Ashe
- **C. succulenta* Link
- **Fragaria virginiana* Duchesne, var. *virginiana*
- F. virginiana* Duchesne, var. *terrae-novae* (Rydb.)
Fern. & Wieg.
- F. × Ananassa* Duchesne
- **Potentilla tridentata* Ait.
- P. tridentata* Ait., forma *aurora* Graustein
- P. palustris* (L.) Scop., var. *villosa* (Pers.) Lehm.
- P. argentea* L.
- P. pectinata* Raf.
- **P. norvegica* L.
- P. canadensis* L.
- **P. simplex* Michx., var. *simplex*
- P. simplex* Michx., var. *calvescens* Fern.
- **P. Egedei* Wormsk., var. *groenlandica* (Tratt.) Polunin
- **Filipendula Ulmaria* (L.) Maxim.
- Geum aleppicum* Jacq., var. *strictum* (Ait.) Fern.
- Rubus pubescens* Raf.
- ***Rubus idaeus* L., var. *idaeus*
- R. idaeus* L., var. *strigosus* (Michx.) Maxim.

- R. idaeus* L., var. *heterolasius* Fern.
 **R. idaeus* L., var. *canadensis* Richards.
R. recurvicaulis Blanch.
R. recurvicaulis Blanch. × *R. setosus* Bigel.
 **R. hispidus* L., var. *hispidus*
R. setosus Bigel. × *R. allegheniensis* Porter
 + ?*R. semisetosus* Blanch.
R. canadensis L.
 **R. allegheniensis* Porter, var. *allegheniensis*
R. frondosus Bigel.
R. pensilvanicus Poir.
Dalibarda repens L.
 **Rosa nitida* Willd.
 **R. virginiana* Mill.
 ***R. virginiana* Mill. × *R. nitida* Willd.
 **R. rugosa* Thunb.
 ***R. cinnamomea* L.
Prunus maritima L.
 **P. pennsylvanica* L. f.
 ***P. Avium* L.
 **P. virginiana* L.
Lupinus polyphyllus Lindl.
Trifolium arvense L.
T. pratense L.
 + *T. pratense* L., forma *pilosum* (Griseb.) Hayek
 **T. repens* L.
T. hybridum L., var. *elegans* (Savi) Boiss.
 **T. agrarium* L.
 **T. procumbens* L.
Medicago lupulina L.
Vicia angustifolia Reichard, var. *segetalis* (Thuill.) W.
 D. J. Koch
 **V. Cracca* L.
 **Lathyrus japonicus* Willd., var. *glaber* (Ser.) Fern.
L. japonicus Willd., var. *pellitus* Fern.
L. palustris L., var. *pilosus* (Cham.) Ledeb.
Linum usitatissimum L.
 **Oxalis montana* Raf.

- O. europaea* Jord., var. *europaea*
 **O. europaea* Jord., var. *europaea*, forma *cymosu*
 (Small) Wieg.
Geranium Bicknellii Britt.
G. molle L.
 **G. Robertianum* L.
Polygala sanguinea L.
 **Euphorbia Cyparissias* L.
E. Peplus L.
 **Empetrum nigrum* L.
 **Corema Conradii* Torr.
 **Rhus typhina* L.
 **R. radicans* L., var. *radicans*
 **Ilex verticillata* (L.) Gray, var. *verticillata*
 **I. glabra* (L.) Gray
 **Nemopanthus mucronata* (L.) Trel.
 + *Celastrus orbiculatus* Thunb.
 **Acer spicatum* Lam.
 **A. pensylvanicum* L.
 **A. saccharum* Marsh.
 **A. rubrum* L., var. *rubrum*
 + *A. rubrum* L., var. *rubrum*, forma *tomentosum* (Desf.)
 Dansereau
 **A. rubrum* L., var. *trilobum* K. Koch
 **Impatiens capensis* Meerb.
Parthenocissus quinquefolia (L.) Planch.
 + *P. inserta* (Kerner) K. Fritsch
 ***Malva neglecta* Wallr.
 **Hypericum perforatum* L.
H. boreale (Britt.) Bickn.
H. mutilum L., var. *parviflorum* (Willd.) Fern.
H. majus (Gray) Britt.
 **H. canadense* L.
 **H. dissimulatum* Bickn.
 **H. gentianoides* (L.) BSP
H. virginicum L., var. *virginicum*
 **H. virginicum* L., var. *Fraseri* (Spach) Fern.
Elatine americana (Pursh) Arn.

- ***Hudsonia ericoides* L.
H. tomentosa Nutt., var. *intermedia* Peck
 **Lechea intermedia* Leggett, var. *intermedia*
L. intermedia Leggett, var. *juniperina* (Bickn.) Robins.
 **Viola cucullata* Ait.
 **V. septentrionalis* Greene
V. fimbriatula Sm.
 **V. pallens* (Banks) Brainerd
V. incognita Brainerd, var. *incognita*
 + *V. incognita* Brainerd, var. *Forbesii* Brainerd
V. blanda Willd.
 **V. lanceolata* L.
V. primulifolia L., var. *acuta* (Bigel.) T. & G.
Decodon verticillatus (L.) Ell., var. *laevigatus* T. & G.
 **Epilobium angustifolium* L.
E. strictum Muhl.
E. leptophyllum Raf., forma *umbrosum* (Haussk.)
 Fern.
E. palustre L., var. *oliganthum* (Michx.) Fern.
E. coloratum Biehler
 + *E. glandulosum* Lehm., var. *adenocaulon* (Haussk.)
 Fern.
 **Oenothera biennis* L., var. *biennis*
O. parviflora L.
 **O. perennis* L.
 **Circaea alpina* L.
 **Aralia hispida* Vent.
 **A. nudicaulis* L.
Hydrocotyle americana L.
Cicuta maculata L.
 + *Carum Carvi* L.
 **Ligusticum scoticum* L.
 **Coelopleurum lucidum* (L.) Fern.
 **Heracleum maximum* Bartr.
 **Daucus Carota* L.
 **Cornus canadensis* L.
C. stolonifera Michx.
C. alternifolia L. f.

- Chimaphila umbellata* (L.) Bart., var. *cisatlantica* Blake
 **Moneses uniflora* (L.) Gray
Pyrola secunda L.
P. virens Schweigger, forma *paucifolia* Fern.
 **P. elliptica* Nutt.
P. rotundifolia L., var. *americana* (Sweet) Fern.
 **Monotropa uniflora* L.
M. Hypopithys L.
 **Ledum groenlandicum* Oeder
 **Rhododendron canadense* (L.) Torr.
 **Kalmia angustifolia* L.
K. polifolia Wang.
 **Cassandra calyculata* (L.) D. Don, var. *angustifolia* (Ait.) Rehd. (= *Chamaedaphne calyculata* (L.) Moench, var. *angustifolia* (Ait.) Rehd. of Gray's Manual).
 **Gaultheria procumbens* L.
 **G. hispidula* (L.) Bigel.
 **Arctostaphylos Uva-ursi* (L.) Spreng., var. *coactilis* Fern. & Mack.
 **Gaylussacia dumosa* (Andr.) T. & G., var. *Bigeloviana* Fern.
 + *G. baccata* (Wang.) K. Koch
Vaccinium myrtilloides Michx.
 + *V. angustifolium* Ait., var. *angustifolium*
V. angustifolium Ait., var. *laevifolium* House
V. angustifolium Ait., var. *nigrum* (Wood) Dole
V. corymbosum L., var. *albiflorum* (Hook.) Fern.
 **V. Vitis-Idaea* L., var. *minus* Lodd.
V. Oxycoccos L.
 **V. macrocarpon* Ait.
 **Lysimachia quadrifolia* L.
L. × producta (Gray) Fern.
 **L. terrestris* (L.) BSP, var. *terrestris*
 **Trientalis borealis* Raf.
 **Glaux maritima* L., var. *maritima*
G. maritima L., var. *obtusifolia* Fern.
 **Limonium Nashii* Small

- **Fraxinus americana* L., var. *americana*
F. pennsylvanica Marsh., var. *subintegerrima* (Vahl)
 Fern.
- **Syringa vulgaris* L.
- **Ligustrum amurense* Carr.
Bartonia virginica (L.) BSP
- **B. paniculata* (Michx.) Muhl., var. *intermedia* Fern.
- **Nymphoides cordata* (Ell.) Fern.
- **Apocynum androsaemifolium* L.
- **Asclepias incarnata* L., var. *pulchra* (Ehrh.) Pers.
- **Convolvulus sepium* L., var. *sepium*
- **Cuscuta Gronovii* Willd.
Myosotis sylvatica Hoffm.
M. arvensis (L.) Hill
- **Mertensia maritima* (L.) S. F. Gray
Verbena hastata L.
- **Teucrium occidentale* Gray, var. *boreale* (Bickn.) Fern.
Scutellaria lateriflora L.
- **S. epilobiiifolia* A. Hamilton
Nepeta Cataria L.
Glechoma hederacea L., var. *hederacea*
- **G. hederacea* L., var. *micrantha* Moricand
- **Prunella vulgaris* L., var. *lanceolata* (Bart.) Fern.
P. vulgaris L., var. *lanceolata* (Bart.) Fern., forma
iodocalyx Fern.
- Leonurus Cardiaca* L.
- **Galeopsis Tetrahit* L., var. *bifida* (Boenn.) Lej. & Court.
- **Hedeoma pulegioides* (L.) Pers.
- **Lycopus uniflorus* Michx.
L. americanus Muhl.
Mentha piperita L.
M. cardiaca Baker
M. arvensis L., var. *arvensis*
- **M. arvensis* L., var. *villosa* (Benth.) S. R. Stewart
- **Solanum Dulcamara* L.
- ***S. nigrum* L.
S. rostratum Dunal
- **Verbascum Thapsus* L.

- Linaria vulgaris* Hill
 **L. canadensis* (L.) Dumont
Scrophularia lanceolata Pursh
Veronica serpyllifolia L.
 **V. officinalis* L.
V. peregrina L., var. *xalapensis* (HBK.) St. John &
 Warren
V. arvensis L.
 **Melampyrum lineare* Desr., var. *lineare*
M. lineare Desr., var. *americanum* (Michx.) Beauverd
Euphrasia Randii Robins.
E. canadensis Townsend
Odontites serotina (Lam.) Dum.
 **Rhinanthus Crista-galli* L., var. *Crista-galli*
Epifagus virginiana (L.) Bart.
 **Utricularia geminiscapa* Benj.
U. cornuta Michx.
 **Plantago major* L., var. *major*
P. major L., var. *Pilgeri* Domin
 **P. juncoides* Lam., var. *decipiens* (Barneoud) Fern.
 **P. oliganthos* R. & S.
 ***P. lanceolata* L.
P. altissima L.
 **Galium Aparine* L.
 **G. triflorum* Michx.
G. verum L.
 **G. palustre* L.
G. trifidum L.
 **G. tinctorium* L., var. *tinctorium*
Mitchella repens L.
 **Houstonia caerulea* L.
 **Diervilla Lonicera* Mill.
Lonicera villosa (Michx.) R. & S., var. *Solonis* (Eat.)
 Fern.
L. villosa (Michx.) R. & S., var. *calvescens* (Fern. &
 Wieg.) Fern.
 **L. canadensis* Bartr.
 +*Symphoricarpos albus* (L.) Blake, var. *albus*

- S. albus* (L.) Blake, var. *laevigatus* (Fern.) Blake
 **Linnaea borealis* L., var. *americana* (Forbes) Rehd.
 **Viburnum cassinoides* L.
 **V. recognitum* Fern.
 **Sambucus canadensis* L.
 **S. pubens* Michx.
Echinocystis lobata (Michx.) T. & G.
Campanula rapunculoides L.
 **C. rotundifolia* L.
 **Lobelia inflata* L.
 **L. Dortmanna* L.
 **Eupatorium perfoliatum* L., var. *perfoliatum*
 **Solidago bicolor* L.
 **S. puberula* Nutt.
 **S. sempervirens* L.
S. juncea Ait.
 **S. uliginosa* Nutt., var. *linoides* (T. & G.) Fern.
S. uliginosa Nutt., var. *terrae-novae* (T. & G.) Fern.
 **S. nemoralis* Ait.
 **S. rugosa* Ait., var. *villosa* (Pursh) Fern.
 **S. canadensis* L.
 **S. graminifolia* (L.) Salisb., var. *Nuttallii* (Greene)
 Fern.
Aster macrophyllus L., var. *macrophyllus*
A. macrophyllus L., var. *velutinus* Burgess
A. cordifolius L., var. *cordifolius*
A. polycephalus Porter
A. radula Ait., var. *radula*
A. radula Ait., var. *strictus* (Pursh) Gray
A. lateriflorus (L.) Britt.
 + *A. lateriflorus* (L.) Britt., var. *tenuipes* Wieg.
A. simplex Willd., var. *ramosissimus* (T. & G.) Cronq.
 + *A. foliaceus* L.
 **A. johannensis* Fern.
 **A. novi-belgii* L., var. *novi-belgii*
 **A. nemoralis* Ait.
 **A.* × *Blakei* (Porter) House
 **A. acuminatus* Michx.

- **A. umbellatus* Mill.
- **Erigeron strigosus* Muhl., var. *strigosus*
E. canadensis L.
- **Antennaria canadensis* Greene
A. neglecta Greene
A. neodioica Greene
A. munda Fern.
- **A. fallax* Greene
A. Brainerdii Fern.
- + *Anaphalis margaritacea* (L.) C. B. Clarke, var. *margaritacea*
- + *A. margaritacea* (L.) C. B. Clarke, var. *intercedens*
Hara
Gnaphalium obtusifolium L.
- **G. uliginosum* L.
- + *Ambrosia artemisiifolia* L., var. *artemisiifolia*
A. artemisiifolia L., var. *elatior* (L.) Descourtils
- ** *A. artemisiifolia* L., var. *elatior* (L.) Descourtils, forma
villosa Fern. and Grise.
- **Rudbeckia serotina* Nutt.
- **Bidens frondosa* L.
B. frondosa L., forma *anomala* (Porter) Fern.
Galinsoga ciliata (Raf.) Blake
- + *Achillea Millefolium* L.
Anthemis Cotula L.
A. tinctoria L.
Matricaria maritima L., var. *maritima*
M. Chamomilla L.
- **M. matricarioides* (Less.) Porter
- **Chrysanthemum Leucanthemum* L., var. *pinnatifidum*
Lecoq. & Lamotte
C. Balsamita L.
Tanacetum vulgare L.
T. vulgare L., forma *crispum* (L.) Hayek
Artemisia vulgare L.
Petasites palmatus (Ait.) Gray
- **Erechtites hieracifolia* (L.) Raf., var. *intermedia* Fern.
- **E. hieracifolia* (L.) Raf., var. *praealta* (Raf.) Fern

- Senecio vulgaris* L.
 **S. sylvaticus* L.
S. Robbinsii Oakes
 ***Arctium nemorosum* Lej. & Court.
 **A. minus* (Hill) Bernh.
Echinops sphaerocephalus L.
 **Cirsium vulgare* (Savi) Tenore
C. muticum Michx.
 **C. arvense* (L.) Scop.
 ***Lapsana communis* L.
 **Leontodon autumnalis* L., var. *autumnalis*
L. autumnalis L., var. *pratensis* (Link) W. D. J. Koch
Taraxacum erythrospermum Andrz.
 **T. officinale* Weber, var. *officinale*
T. officinale Weber, var. *palustre* (Sm.) Blytt
Sonchus arvensis L.
 **S. oleraceus* L.
 **S. asper* (L.) Hill
Lactuca canadensis L., var. *canadensis*
L. canadensis L., var. *longifolia* (Michx.) Farw.
L. canadensis L., var. *latifolia* Ktze.
L. biennis (Moench) Fern.
 **Prenanthes trifoliolata* (Cass.) Fern., var. *trifoliolata*
 +*P. trifoliolata* (Cass.) Fern., var. *nana* (Bigel.) Fern.
P. altissima L.
P. altissima L., forma *hispidula* Fern.
Hieracium Pilosella L.
 **H. aurantiacum* L.
 **H. pratense* Tausch
H. florentinum All.
H. canadense Michx., var. *canadense*
H. paniculatum L.
H. scabrum Michx.

A close examination of the preceding list will reveal that the vascular flora of Isle au Haut is chiefly transitional in character and is generally typical of what has been termed the Canadian Transition Zone (Hill, 1923). This "zone" contains floristic elements from both the more northern

Boreal Region and the Alleghenian Region to the south. However, a few Carolinian plants of the southeastern coastal plain and a few Arctic plants are present on the island as well. These are of particular interest due to their markedly disjunct distributions.

The following plants of Coastal Plain and Arctic phyto-geographic affinities were found to be present on Isle au Haut in 1968-69 and deserve special mention. Specimens are deposited in the herbarium of the University of New Hampshire (NHA).

COASTAL PLAIN PLANTS

***Thelypteris simulata* (Davenp.) Nieuwl.** Massachusetts Fern.

The Massachusetts Fern was found to be locally abundant in alder thickets at the edge of a bog at Moore's Harbor on the western side of Isle au Haut. While found in southwestern Nova Scotia the 1969 collections are the first Knox County records for this species and indicate a slight northeastern extension of range in the United States from Lincoln County, Maine.

***Corema Conradii* Torr.** Broom-Crowberry.

This coastal plain relative of *Empetrum* was collected on Isle au Haut by Albert F. Hill in 1913. In 1968-69 it was frequently encountered on the rocky summits of Mt. Champlain and Black Dina.

***Ilex glabra* (L.) Gray** Inkberry.

The inkberry was first collected on Isle au Haut by Nathaniel T. Kidder in 1922 (Kidder, 1923). It was found growing in the "Great Meadow" bog, and Mr. Kidder noted that it occurred in "considerable quantity, fifty plants or more". In 1969 the writer and Dr. A. R. Hodgdon found the plant still growing at the same site covering an area of about fifty by seventy-five feet. While quite abundant locally, the plants were small, low growing, and depauperate in aspect. These collections from Isle au Haut represent

the only known occurrence of *Ilex glabra* between Seabrook, New Hampshire (Hodgdon, 1955) and Nova Scotia (Kidder, 1923).

Bartonia paniculata (Michx.) Muhl., var. ***intermedia*** Fern.

In 1922 Kidder also collected this Coastal Plain plant in the same bog on Isle au Haut where he had found *Ilex glabra*. Though very infrequent in occurrence, it was still present in 1969. This station, therefore, remains the only one known for this variety of *B. paniculata* between Nova Scotia and the Blue Hills, Massachusetts (Fernald, 1921; Kidder, 1923; Seymour, 1969).

In addition to the above, ***Hudsonia ericoides*** L., a plant with a somewhat similar Coastal Plain distribution, was collected on Isle au Haut by Kidder in 1901 and 1926. The writer was unable to locate the collecting sites in 1968-69. Consequently the present occurrence of *Hudsonia ericoides* on Isle au Haut remains in doubt.

ARCTIC PLANTS

Scirpus cespitosus L., var. ***callosus*** Bigel.

Not previously reported from Isle au Haut, this plant of Arctic affinity was found to be quite common in moist depressions on the top of Duck Harbor Mountain. Other taxa of similar phytogeographic relationship also frequent at the same site were: *Arenaria groenlandica*, *Arctostaphylos Uva-ursi*, and *Empetrum nigrum*.

Mertensia maritima (L.) S. F. Gray

This plant of Arctic affinity was collected previously on Isle au Haut by Kidder in 1926. Though still present in 1969, it was represented only by a few depauperate plants found along the shore of Barred Harbor.

Three species of similar phytogeographic range: *Iris Hookeri*, *Montia lamprosperma*, and *Sedum Rosea*, though previously collected on Isle au Haut, were not found there in 1968-69.

INTRODUCED PLANTS

In addition to species having either Coastal Plain or

Arctic affinities, two introduced plants recently found on Isle au Haut deserve mention.

***Molinia caerulea* (L.) Moench**

This European grass was first collected by Kidder on Point Lookout in 1918. Later collections were made by him at the same locality in 1919 and 1927. The writer and Dr. A. R. Hodgdon visited the site in 1969 and found the grass not only persisting but apparently spreading very successfully. The only other known collections of *Molinia* in Maine were made by E. P. Bicknell at Mt. Desert, Bar Harbor, and York Harbor in 1897. Curiously all three collections were made on August 25 — an admirable though suspect feat considering that York Harbor is some 150 miles from Mt. Desert Island (Dix, 1945).

***Iberis umbellata* L.**

Very close to the *Molinia* locality this plant was found growing in considerable abundance in a filled in cellar-hole. Apparently once cultivated it presently is spreading successfully as a weed. The only other known record of *I. umbellata* from New England is a specimen in the New England Botanical Club Herbarium collected by A. S. Pease in Randolph, New Hampshire, in 1916.

DEPARTMENT OF BOTANY

UNIVERSITY OF NEW HAMPSHIRE, DURHAM

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